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Docket No.: 50103-337

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Customer Number: 20277
Mariana MUNTEANU, et al. : Confirmation Number: 9632
Serial No.: 09/702,667 : Group Art Unit: 1773
Filed: November 01, 2000 : Examiner: K. Bernatz
For: BILAYER MAGNETIC STRUCTURE FOR HIGH DENSITY RECORDING
MEDIA

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REPLY BRIEF

Mail Stop Reply Brief
Commissioner for Patents
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Sir:

This Reply Brief is submitted in response to the Examiner's Answer dated
October 23, 2003.

ARGUMENTS

Appellants acknowledge the Examiner's withdrawal of the rejections of claims 3,
4 and 9, and the indication that such claims contain allowable subject matter.

Appellants, however, submit that the remaining rejections are factually and
legally erroneous for reasons set forth in the Appeal Brief submitted July 30, 2003, and
for reasons set forth *infra*.

Initially, Appellants would note that the decision *Elan Pharmaceuticals, Inc. v. Mayo Foundation*, 304 F.3d 1221, 64 USPQ2d 1292 (Fed. Cir. 2002) no longer represents viable precedent, although there is no uniformity of agreement among the judges on the Court of Appeals for the Federal Circuit as to the requirement for art recognition in inherency rejections.

The rejection of claims 1, 7 and 8 under 35 U.S.C. §102 for lack of novelty as evidenced by Ohkijima et al. “as evidenced by appellants’ admission”.

In the Appeal Brief submitted July 30, 2003, it was argued that the Examiner failed to established the requisite **certainty** required to support a rejection under 35 U.S.C. §103 predicated upon inherency. *Crown Operations International Ltd. v. Solutia Inc.*, 289 F.3d 1367, 62 USPQ2d 1917 (Fed. Cir. 2002); *Finnegan Corp. v. ITC*, 180 F.3d 1354, 51 USPQ2d 1001 (Fed. Cir. 1999); *Electro Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994); *Continental Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 20 USPQ2d 1746 (Fed. Cir. 1991).

Appellants also stressed that the magnetic contribution of the intermediate layer in the medium disclosed by Ohkijima et al. is completely eliminated or markedly reduced. Not to be deterred by the explicit teachings of his primary reference, Examiner would attribute to the intermediate layer, who’s magnetic contribution is completely eliminated or markedly reduced, **superior magnetic properties** than the **actual magnetic layer** of the medium disclosed by Ohkijima et al. The Examiner’s attempt to redefine the teachings of Ohkijima et al. is acutely misguided and clearly at odds with the expressed disclosure of Ohkijima et al.

The basis for the Examiner's determination is acutely misguided and clearly said to be Example 26. The fact that there are 49 examples itself undermines the requisite certainty. At any rate, the Examiner says that in Example 26 the intermediate layer has a higher SMNR than the actual magnetic layer. Apparently the Examiner has determined that the attempts by Ohkijima et al. to nullify the magnetic contribution of the intermediate layer were unsuccessful. The Examiner premises this determination upon an asserted admission.

It is not apparent wherein Appellants ever admitted that **any** alloy, formulated and deposited to serve as an intermediate layer intended to be **without** magnetic contribution, **necessarily** exhibits superior SMNR than an intended magnetic alloy having **different** elements, merely because the intended non-magnetic intermediate layer has more chromium than the intended magnetic layer. It should be apparent that in Example 26 of Ohkijima et al., the magnetic layer contains **tantalum**. Appellants question: What is the **factual basis** upon which to determine, with **certainty**, that an intermediate alloy purposely formulated and deposited so that its magnetic contribution is completely eliminated or marketedly minimized, would **necessarily** exhibit superior SMNR than an actual magnetic layer which has less chromium than that the intermediate layer? The Examiner **deems** too much.

The Examiner's response to the arguments advanced in the July 30, 2003 Appeal Brief, which appears at page 14 of the October 23, 2003 Answer, underscore the Examiner's improper **speculation** in invoking the doctrine of inherency. For example, in the first full paragraph on page 14, the Examiner asserts that "...the intermediate layer clearly exhibits some degree of magnetization and is hence, a magnetic layer". That the

intermediate layer may exhibit **some** (feeble) magnetization does not mean that it has **better** recording properties (SMNR) than the actual magnetic layer intended by Ohkijima et al. This illogical conclusion betrays a wavering grip on reality and conveniently ignores the fact that Ohkijima prefer the intermediate layer to be non-magnetic (column 3, lines 32, 33, 45 and 46). Indeed, in column 3, lines 43 through 37, it is disclosed that the saturation magnetic flux density of the intermediate layer can be set to such a small value as to completely eliminate the influence of the intermediate layer on the magnetic recording medium. In column 4, lines 38 through 42, it is disclosed that:

An **important feature** of the invention is that by using a non-magnetic or feebly magnetic intermediate Co-based alloy layer having the hcp structure under the magnetic layer, **the magnetic influence attributed to the intermediate layer is completely eliminated or marketedly minimized.** (Emphasis supplied).

In short, the Examiner perceives that the intermediate layer may “exhibit some degree of magnetization”, albeit **feeble** (an important feature of the invention), and then exalts such a feeble magnetization to a level superior to that than the actual magnetic layer. The Examiner’s approach is clearly factually and legally erroneous.

Significantly, in the paragraph bridging pages 14 and 15 of the Answer, first sentence, the Examiner states:

Second, the Examiner notes that SMNR is a property of **many characteristics** of the layer, including the alloy composition and microstructure. (Emphasis supplied).

The Examiner’s admission that the SMNR is a function of “many characteristics” underscores the lack of certainty required to support an inherency rejection. Since the Examiner admits that SMNR depends on **many characteristics**: How can the Examiner

say that an intermediate layer purposely formulated and deposited to be without or with feeble magnetic influence, is somehow superior in SMNR to the actual magnetic layer?

In the sentence bridging pages 14 and 15 of the Answer, the Examiner asserts that the intermediate layer “....**may** also inherently process the claimed functionally SMNR limitation required by appellants.” The Examiner’s choice of the word “may”, itself, undermines the factual determination of inherency which requires certainty and, as previously argued, is completely inconsistent with the explicit teachings of Ohkijima et al. *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 34 USPQ2d 1565 (Fed. Cir. 1995).

The facts are that:

- (1) the Examiner’s conclusion is **contrary** to the explicit teachings of Ohkijima et al.;
- (2) the Examiner admits SMNR is a function of many variables; and
- (3) the Examiner himself resorts to speculation using the word “may” to advance his inherency determination. These facts spell death to the Examiner’s rejection under 35 U.S.C. § 102.

The Examiner appears to fall back contending the claim limitations regarding SMNR are “deemed” functional limitations. Not so. SMNR is one of the most important **properties** of magnetic layers. At any rate, as appreciated by the Examiner, the claim limitations regarding SMNR cannot be ignored.

Appellants, therefore, submit that the Examiner’s rejection of claims 1, 7 and 8 under 35 U.S.C. §102 for lack of novelty as evidenced by Ohkijima et al. as evidenced by appellants’ admissions is clearly factually erroneous.

The rejection of claims 1 and 5 through 7 under 35 U.S.C. §103 for obviousness predicted upon Moroishi et al. in view of Miyazaki et al. and Zhang et al.

In the Appeal Brief, Appellants stressed that the present invention strategically optimizes two different magnetic layers of a magnetic recording medium: an underlying magnetic layer formed on the underlayer for SMNR and a magnetic layer formed thereon for Ms. Appellants stressed that the notion of optimizing two magnetic layers of a magnetic recording medium separately, one for SMNR and one for Ms, is alien to the applied prior art.

So the Examiner begins with a primary reference to Moroishi et al. and **admits** that the disclosed magnetic recording medium **does not have a first magnetic layer exhibiting a higher SMNR than a second magnetic layer**, and after combining that reference with Zhang et al., **admits** that the resulting medium still **does not have a second magnetic layer exhibiting a higher Ms than the first magnetic layer**. In other words, the primary reference relied upon by the Examiner admittedly fails to disclose a magnetic recording medium with a first magnetic layer exhibiting a higher SMNR than the second magnetic layer or a second magnetic layer exhibiting a higher SMNR than the first magnetic layer. The Examiner's tortuous road map in route to the claimed invention is apparently illuminated only by Appellants' disclosure which, of course, is forbidden territory upon which the Examiner may excavate for the requisite motivational element. *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 227 USPQ 337 (Fed. Cir. 1985).

In view of the above argued and admitted lacuna between the claimed invention and the magnetic recording medium disclosed by Moroishi et al., Appellants argued in their Appeal Brief that the Examiner did not establish the requisite realistic motivation citing *In re Lee*, 237 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002). Appellants noted that in *In re Lee*, *supra*, the Examiner sought to combine two references, each showing a feature of the claimed invention. The Court stressed that the Examiner must provide a “thorough and searching” factual inquiry based upon objective evidence. *In re Lee*, 61 USPQ 2d at 1433. Here the Examiner seeks to combine three different references without cogent fact-based reasoning. Appellants concluded the Examiner did not provide a factual basis upon which to predicate the conclusion that one having ordinary skill in the art would have been realistically impelled to dramatically restructure the magnetic recording medium disclosed by Moroishi et al. by providing two magnetic layers, one optimized for SMNR and one optimized for Ms, as in the claimed invention. Indeed, Appellants stressed that the Examiner never pointed to any reference which disclosed or suggested the idea of forming a magnetic recording medium having plural magnetic layers, one which is optimized for SMNR and another optimized for Ms. *In re Lee*, *supra*. Appellants also argued that the prior art did not recognize what Appellants found— if coercivity and SMNR are increased, Ms suffers.

The Examiner’s response commences in the first full paragraph on page 15 of the Answer. The Examiner asserts admitted art recognition of a decrease in Ms if coercivity and SMNR are increased by virtue of increasing the chromium content. But the Examiner still has **not** pointed out any **factual** basis upon which to predicate the

conclusion that one having ordinary skill in the art would have been realistically impelled to structure a magnetic recording medium having two magnetic layers, an underlying magnetic layer optimized for SMNR and an overlying magnetic layer optimized for Ms.

In re Lee, supra.

In the paragraph bridging pages 16 and 17 of the Answer, the Examiner serves up a boiler plate generalization, the rubric of resolving obviousness issues by “what the combined teachings would have suggested to those of ordinary skill in art”, as if somehow the “combined teachings” represents actual prior art. The Examiner’s freeze-dried approach to the legal conclusion of obviousness ignores the legal requirement for fact-based reasoning to establish the motivation to even get to the “combined teachings” and is clearly inconsistent with *In re Lee, supra*.

Under the caption “Additional Differences between the References” appearing at page 11 of the Appeal Brief, Appellants noted that the magnetic recording medium of Moroishi et al. requires a non-magnetic spacer between the layers, but Zhang et al. deposit a second magnetic layer **directly** on the first magnetic layer. Appellants argued that one having ordinary skill in the art would **not** have been realistically led to arbitrarily extrapolate features between these references **because**, as appreciated by the Examiner, the **properties** of a magnetic layer **depend** on the layer upon which it is deposited.

The Examiner responds in the ultimate paragraph on page 17 of the Answer by first asserting the claims are open to additional layers, including non-magnetic spacer layers. **The Examiner misses the point.** The argument presented was based upon “additional **differences** between the **references**”, not the scope of the claimed invention.

The Examiner is trying to press fit together the reference to Moroishi et al., which requires a non-magnetic spacer, and the reference to Zhang et al., which requires direct deposition of the second magnetic layer on the first magnetic layer, in the face of art recognition that properties of a layer depend upon the underlying layer.

The Examiner then generalizes asserting "...the prior art clearly recognizes that dual magnetic layers **can** be used adjacent to each". There is no doubt that magnetic recording media have been fabricated with adjacent magnetic layers and with magnetic layers spaced apart by non-magnetic layers. But what is the **factual** basis upon which to predicate the conclusion that one having ordinary skill in the art would have been realistically impelled to arbitrarily transpose features from one to the other with a reasonable expectation of success? *In re Lee, supra.*; *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The Examiner cannot ignore the judicial requirement for facts by asserting "Therefore the Examiner **deems** the structure of Moroishi et al. is analogous to the dual layered structured disclosed by Appellants and Zhang et al. and the teachings of optimization of the SMNR and Ms values would be applicable regarding of whether non-magnetic spacer layers existed between the claim magnetic layers" (ultimate sentence of the penultimate paragraph on page 17 of the Answer). No amount of deeming can create missing facts. *Ex parte Stern*, 13 USPQ2d 1379 (BPAI 1989).

On page 12 of the Appeal Brief, Appellants argued that the problem addressed and solved by the claimed invention resides in the decrease in Ms upon increasing the coercivity and SMNR of a magnetic layer. Appellants also argued that the problem is revealed by Appellants. Appellants then argued that the problem addressed and solved by the claimed invention merits consideration as an indicium of nonobviousness. *Jones*

v. Hardy, 727 F.2d 1524, 220 USPQ 1021 (Fed. Cir. 1984). The Examiner has improperly declined to consider the problem addressed and solved by the present invention.

Based upon the foregoing, Appellants submit that the imposed rejection of claims 1 and 5 through 7 under 35 U.S.C. §103 for obviousness predicted upon Moroishi et al. in view of Miyazaki et al. and Zhang et al. is not factually or legally viable.

The rejection of claim 2 under 35 U.S.C. §103 for obviousness predicted upon Moroishi et al. in view of Miyazaki et al. and Zhang et al., Yoshikawa et al. admit the acknowledged prior art and Song et al.

In the Appeal Brief Appellants did not separately argue the patentability of claim 2. However, because the Examiner has now heavily relied upon a perceived admission, Appellants would, therefore, separately argue the patentability of claim 2, which requires the second magnetic layer to have a higher cobalt content than the first magnetic layer. In this respect, the problem addressed and solved by the claimed invention stems from an increase in the chromium content which necessitates a decrease in the cobalt content, thereby detrimentally impacting Ms. That is what Appellants have found. Thus, the requirement for the second magnetic layer have a higher cobalt content than the first magnetic layer sets up the problem addressed and solved by the claimed invention and, hence, merits consideration anent the nonobviousness issue. *Jones v. Hardy, supra*.

The Examiner appears to “deem” a great deal. One that stands out the most is the Examiner deemed it necessary to attempt to stitch together six references to arrive at

claim 2 without even finding a suggestion, a hint, to fabricate a magnetic recording medium having two magnetic layers, an underlying the magnetic layer optimized for SMNR and an overlying magnetic layer optimized for Ms, let alone one wherein the second magnetic layer has a higher cobalt content than the first magnetic layer.

Appellants, therefore, submit that the imposed rejection of claim 2 is under 35 U.S.C. §103 is clearly factually and legally erroneous.

Conclusion


Based upon the arguments submitted in the July 30, 2003 Appeal Brief, and for the reasons submitted herein, Appellants submit that each of the Examiner's rejections are factually and legally erroneous. Appellants, therefore, solicit the Honorable Board to reverse each of the Examiner's rejections.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

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Respectfully submitted,

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